

Applicant : Lawrence H. Domash  
Serial No. : 10/000,146  
Filed : October 19, 2001  
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Atty. Docket No.: 111554.126 US5

In the Claims:

Please amend the claims as follows:

1. (Cancelled)

2. (Cancelled)

3. (Cancelled)

4. (Cancelled)

5. (Cancelled)

6. (Cancelled)

7. (Cancelled)

8. (Currently Amended) The method of claim 7 27, further ~~comprising~~ comprising combining an information signal and a pilot signal to form the optical beam.

9. (Currently Amended) The method of claim 8, further ~~comprising~~ comprising modulating the pilot signal to distinguish it from the information signal.

10. (Currently Amended) The method of claim 8, further ~~comprising~~ comprising emitting the pilot signal at a different frequency than the information signal to distinguish it from the information signal.

11. (Cancelled)

12. (Cancelled)

13. (Cancelled)

Please add the follow new claims 14-27:

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14. (New) An optical device for aligning an optical beam from a source, said optical device comprising:  
a substrate that is transparent to the optical beam;  
a beam steering element which during operation receives the optical beam and produces a steered optical beam that passes through a target region of the substrate;  
a sensor assembly on the substrate, said sensor assembly having detector regions that are at least semitransparent to the steered optical beam, said sensor assembly also having a plurality of electrodes arrayed around the target region, wherein during use the steered optical beam passes through the target region and on toward a target element and the sensor assembly generates signals at the plurality of electrodes that indicate a position of the steered optical beam relative to the target region and that are used to control the beam steering element so as to align the steered beam relative to the target region.

15. (New) The optical device of claim 14 wherein the optical beam is a laser light beam and the steered optical beam is a steered laser light beam.

16. (New) The optical device of claim 14 wherein the sensor assembly includes a plurality of individual and separate sensor portions arrayed around the target region and each electrically coupled to a different one of said plurality of electrodes, said plurality of sensor portions being semitransparent to the steered optical beam.

17. (New) The optical device of claim 14 wherein the plurality of sensor regions are different portions of a semitransparent detector film that completely covers the target region.

18. (New) The optical device of claim 17 wherein the plurality of electrodes are arrayed about the target region in a rectangular pattern.

19. (New) The optical device of claim 17 further comprising said source.

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20. (New) The optical device of claim 19 wherein the optical beam from said source includes a pilot portion and an information-carrying portion.

21. (New) The optical device of claim 20 wherein the pilot portion is carried on a first wavelength and the information-carrying portion is carried on a second wavelength that is different from said first wavelength.

22. (New) The optical device of claim 21 wherein the detector regions are more sensitive to the first wavelength than the second wavelength and are more transparent to the second wavelength than the first wavelength.

23. (New) The optical device of claim 14 further comprising a second sensor assembly on the substrate, said first-mentioned sensor assembly being on one side of said substrate and said second sensor assembly being on another side of said substrate, said second sensor assembly having second detector regions that are at least semitransparent to the steered optical beam, said second sensor assembly also having a plurality of second electrodes arrayed around the target region, wherein during use the second sensor assembly generates signals at the plurality of second electrodes which with the signals generated at the plurality of first mentioned electrodes indicate both the position of the optical beam relative to the target region and a direction of the optical beam through the target region.

24. (New) The optical device of claim 14 further comprising:  
a control system that controls an orientation of the beam steering element; and  
a feedback circuit which during use receives the signals from the plurality of electrodes and causes the control system to appropriately orient the beam steering element.

25. (New) The optical device of claim 14 further comprising a plurality of sensor assemblies on the substrate, said first-mentioned sensor assembly being one of said plurality of sensor assemblies, each of said plurality sensor assemblies (a) having detector regions that are at

least semitransparent to the steered optical beam, and (b) also having a plurality of electrodes arrayed around a corresponding one of a plurality of target regions.

26. (New) An optical device for aligning an optical beam from a source, said optical device comprising:

a substrate that is transparent to the optical beam;

a beam steering element which during operation receives the optical beam and produces a steered optical beam that passes through a target region of the substrate;

a sensor assembly on the substrate, said sensor assembly including a plurality of independent and separate sensor portions arrayed around the target region and a plurality of plurality of electrodes, each of which is electrically coupled to a different one of said plurality of sensor portions, said plurality of sensor portions being semitransparent to the steered optical beam, wherein during use the steered optical beam passes through the target region and on toward a target element and the sensor assembly generates signals at the plurality of electrodes that indicate a position of the steered optical beam relative to the target region and that are used to control the beam steering element so as to align the steered beam relative to the target region.

27. (New) A method of controlling an optical switch, said method comprising:

receiving an optical beam;

interacting the received optical beam with an optical steering element to generate a steered optical beam;

passing the steered optical beam through semitransparent sensor regions of a sensor assembly and on towards a target element, said sensor regions defining a target area; and

based on a signal derived from the sensor assembly, using the optical steering element to maintain the steered optical beam at a desired position relative to the target area.